

Avian Influenza

Information for Poultry Producers and Allied Industries

Avian Influenza (AI) is a contagious disease caused by Type A influenza viruses that infect a wide variety of domestic and wild birds. In domestic chickens, AI may cause a highly lethal, systemic disease termed highly pathogenic AI (HPAI). All other AI infections are classified as low pathogenic (LPAI). In addition, some low pathogenic viruses have a particular genetic structure that enables them to easily change to the a HPAI form, prompting regulatory agencies to treat them as HPAI regardless of their disease manifestations in poultry.



Historically, HPAI has been responsible for devastating disease outbreaks in commercial poultry production areas worldwide. In the U. S. and other countries with modern production systems, such outbreaks are controlled through government-mandated eradication programs involving movement restrictions and the destruction of infected flocks.

Asian Bird Flu

Since December 2003, eight Asian countries have been plagued by an unprecedented number of HPAI outbreaks caused by an H5N1 subtype. For more information, visit the USDA Animal and Plant Health Inspection Service website at:

<http://www.aphis.usda.gov/lpa/issues/issues.html>.

Eradication of HPAI in U.S.

Recently in the U. S., several states have reported incidents of AI infection. In February 2004, HPAI was found during routine surveillance on one small poultry premises in Texas and was quickly contained and eradicated. For more information, visit the Texas Animal

Health Commission online at <http://www.tahc.state.tx.us>. The last major HPAI outbreak in the U. S. occurred in Pennsylvania in 1983 and 1984. Eradication costs at that time exceeded \$60 million.

Spread of the Disease

Avian influenza viruses occur throughout the globe. Free-flying aquatic birds have been the most frequent source of virus: Ducks, geese, gulls and shorebirds are considered principal reservoirs. In these species, AI infections usually do not cause signs of disease, but have been incriminated as the source of many AI outbreaks in domestic poultry throughout the world.

Development of the Disease

In poultry, AI infection covers the entire range of severity from unapparent infection to sudden death. Clinical signs may appear 3-5 days after viral exposure. Mortality rates vary widely depending on the pathogenicity of the virus, concurrent infections and environmental stressors.

Clinical Signs



Signs in affected flocks may include any or all of the following:

- Depression
- Decreased feed and water consumption
- Decreased egg production
- Soft or misshapen eggs
- Respiratory signs (coughing and sneezing)
- Swollen heads and bluish combs
- Hemorrhages on internal organs
- Diarrhea
- Nerve disorders

Animal Health and Food Safety Services

For additional information contact the Animal Health Branch at:

Phone: (916) 654-1447 Fax: (916) 653-2215

Or visit our website at <http://www.cdffa.ca.gov>



Avian Influenza Fact Sheet (cont)

Diagnosis

Clinical signs or serologic testing of blood samples will provide evidence of the presence of virus. Definitive diagnosis is achieved by virus isolation and identification. Virus is usually recovered by sampling respiratory or digestive system tissues. New rapid molecular diagnostic techniques can indicate the presence of virus in a very short time.

Control and Eradication

State and federal officials determine if an AI virus should be considered for eradication. Extensive laboratory testing determines the subtype and pathogenicity of the virus. While laboratory testing takes time, immediate control measures to contain the spread of virus may be necessary. Once the nature of the virus is understood, control measures may be lifted. Conversely, depending on the pathogenicity classification, official control and eradication measures may be warranted. Quarantine, flock depopulation and control of product movement may be used to halt spread of infection. Because of the large number of subtypes of AI and the fact that vaccines are not cross-protective between subtypes, vaccines are impractical as a prevention tool. However, vaccines have been used effectively to reduce virus shedding and limit spread after an outbreak has occurred and the subtype is known.

Trade Restrictions

Interstate and international trade embargoes may be placed on affected states or countries during an avian influenza outbreak.

Risk to Human Health



Until recently, human infection by AI virus was not known to occur. However, in 1997, an AI virus was transmitted directly from chickens to humans in Hong Kong. Eighteen people were infected and six died. All poultry on the island were depopulated to end the

outbreak. The current outbreak in Asia has caused over 20 human deaths. For updated information visit <http://www.cdc.gov/gov/flu/avian/index.html>.

Prevention

The only practical protection against an outbreak of avian influenza is biosecurity. Biosecurity refers to actions taken to minimize the risk of transmitting disease. Because the virus can survive for long periods of time in organic material, the list of possible ways to spread disease is large and includes people, equipment and

wild birds. The disease is spread between farms primarily through direct contact of healthy birds with respiratory secretions or fecal material from infected birds. Although the virus may be transmitted through the air between birds in a single house, airborne transmission probably does not occur between premises.

The disease can also spread easily by indirect means. Contaminated material may be picked up on shoes and



clothing, and carried from flock to flock. AI may be spread by personnel and equipment associated with live-haul, vaccination, insemination, manure hauling, feed delivery, rendering, egg collection, bird care and other activities that could carry virus from place to place.

The poultry industry and its allied industries bear the primary responsibility to defend against AI by implementing effective biosecurity measures. Poultry veterinarians and university extension agents can assist with the development of facility-specific biosecurity plans.

The following are some recommended biosecurity practices to safeguard poultry flocks from AI and other poultry diseases:

- Permit only essential workers and vehicles on the premises.
- Provide disposable coveralls, boots and head covering for necessary visitors.
- Provide clean clothing and disinfection facilities for employees.
- Thoroughly clean and disinfect vehicles entering or leaving the premises.
- Avoid visiting other poultry operations.
- Do not allow other birds to be kept on the premises.
- Do not hire employees who own or associate with birds for any purpose.
- Provide biosecurity training to employees. Call 1-800-491-1899 for information.
- Do not share equipment with other poultry facilities.
- Thoroughly clean and disinfect all equipment coming onto the facility.
- Remove weeds and other vegetation from around poultry houses.
- Protect flocks from exposure to wild birds, rodents and insects.
- Prevent standing water accumulations that may be attractive to wild birds.
- Control movement associated with the disposal of mortality, litter and manure.
- Take diseased birds to a diagnostic lab for evaluation.